

**REMARKS**

This responds to the Final Office Action mailed on July 10, 2009.

Claims 1-3, 12-13, 15-19, 22-23, 40-42, and 44-46 are amended. No claims are canceled, and no claims are added; as a result, claims 1-46 remain pending in this patent application, of which claims 24-38 have been withdrawn by the Examiner.

**Interview Summary**

Applicant thanks Examiner Alyssa Alter for the courtesy of a helpful telephone interview on October 2, 2009 with Applicant's representative Sarvesh J. Nadkarni. Proposed amendments, similar to the above presented amendments, were discussed along with the cited reference Seguine et al., (U.S. US 6,185,450 B1). Examiner Alter indicated the proposed amendments would need further clarification over the prior art and suggested language which may overcome the prior art. In view of the present claim amendments, Applicant respectfully requests reconsideration and allowance of all presently pending claims.

**Request for Telephonic Interview**

If the present claim amendments do not result in allowance of all claims, then Applicant kindly requests a telephonic interview with the Examiner and Applicant's representative, Suneel Arora or Sarvesh J. Nadkarni, to help expedite examination.

**Information Disclosure Statement**

Applicant submitted an Information Disclosure Statement and a PTO 1449 Form on November 16, 2004. Applicant notes the reference listed on page 2, under "Other Documents" has not been initialed. Applicant respectfully requests that an initialed copy of the PTO 1449 Forms be returned to Applicant's Representatives to indicate that the cited references have been considered by the Examiner.

*§ 112 Rejection of the Claims*

Claim 7 was rejected as indefinite on the grounds that claim 3 recites the “QRS complex,” while claim 7 recites “a T-wave.” The Office Action asserts “[i]t is unclear if the Applicant has additional sensing circuitry to detect the T wave or how the T wave is sensed, since the previous claim detects the ‘QRS complex.’”

Applicant respectfully traverse the rejection. As similarly discussed in the Office Action dated March 30, 2009, one of ordinary skill in the art would understand a sensed heart signal can include both a QRS complex and a T-wave. The sensing circuit can be used to detect a heart signal’s QRS and T-wave events as they are both part of the heart signal. Additionally, Applicant’s claims and specification describe heart signals as having “various events including depolarizations (e.g., P-waves and QRS complexes), and also including repolarizations (e.g., T-waves)” and does not describe each event as a separate heart signal, as apparently interpreted by the Office Action. (See Applicant’s specification, for example, at p. 1, lines 17-25 and further illustrated in Figures 5-7, 9-15 and 18-20.) Therefore, Applicant respectfully submits the claims as amended are sufficiently clear, and Applicant respectfully requests the reconsideration and withdrawal of this claim rejection.

*§ 102 Rejection of the Claims*

Claims 1-7, 11-23 and 39-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Seguine et al. (US 6,185,450 B1, hereinafter referred to as “Seguine”). Applicant traverses the rejection and respectfully submits there is presently no *prima facie* case of anticipation under § 102 since Seguine does not disclose each and every recitation presently provided in the independent claims.

Applicant has amended independent claims 1 and 22 to clarify that the sensing circuit’s frequency response is initiated by “at least one of a detected pacing therapy event or a detected evoked or detected intrinsic heart chamber contraction event of the heart signal.” Additionally, Applicant has amended dependent claims 2-3, 12-13, 15-19, 23, 40-42, and 44-46 to clarify that the therapy event, the evoked event and/or the intrinsic event are detected to initiate the frequency response. Support for these amendments can be found in Applicant’s specification,

for example, at least at p. 1, lines 17-25, in the description of the Figures on pp. 4-5, and additionally in Figures 5-7, 9-15 and 18-20.

Applicant cannot find in the cited portions of Seguine any disclosure of a sensing circuit with a frequency response initiated by “at least one of a detected pacing therapy event or a detected evoked or a detected intrinsic heart chamber contraction event of the heart signal” as recited or incorporated in the claims. Instead, Seguine discloses a monitoring circuit for quickly restoring the proper processing of ECG signals after detecting saturation of the amplifiers by disruptive defibrillation or pacing. (See Seguine at col. 4, lines 25-35 and col. 9, lines 5-10.) Upon determining whether the amplifiers are saturated by a disruptive defibrillation or pacing pulse, Seguine’s circuit switches from a first position that causes the monitoring circuit to have a slow frequency response curve for continued monitoring of ECG waveforms, to a second position in which the monitoring circuit has a fast frequency response curve thereby allowing the amplifiers of the monitoring circuit to quickly be brought out of saturation. (See Seguine at Abstract, lines 4-12 and col. 9, lines 1-23.) Seguine further describes ways to incrementally step the duty cycle to avoid producing erroneous QRS detect marks. (See Seguine at col. 3, lines 1-9 and col. 4 lines 39-44.) However, Seguine’s monitoring circuit is designed to switch from the first position to the second position only after saturation of the operational amplifiers is detected. (See Seguine at col. 2, lines 52-55.)

As stated above, the frequency response of the sensing circuit in the present application is initiated by “at least one of a detected pacing therapy event or a detected evoked or a detected intrinsic heart chamber contraction event of the heart signal,” not upon the limited occurrence of detecting saturated amplifiers caused by a disruptive defibrillation or pacing pulse, as disclosed in Seguine. Applicants respectfully submit, it would be improper to equate Seguine’s detection of amplifier saturation by a disruptive defibrillation or pacing pulse with the at least one detected event, as recited or incorporated in the claims. Applicant’s specification and claims clearly describe heart signals as inclusive of various “events” such as “QRS complexes”, “T-waves”, and “P-waves.” (See Applicant’s specification, for example, at p. 2, lines 21-25.) Because the claims are to be “given their broadest reasonable interpretation consistent with the specification” (See MPEP at § 2111 Claim Interpretation; Broadest Reasonable Interpretation) any apparent suggestion by the Office Action to equate the at least one detected event of the heart signal as

recited or incorporated in the present claims with Seguine's detection of saturated sense amplifiers caused by disruptive defibrillation or pacing pulse would simply fail as being inconsistent with the claims and specification of the present application. Additionally, because the claims as amended recite or incorporate the detected evoked or detected intrinsic event is of *a heart chamber contraction*, it simply cannot originate from a defibrillation pulse, as may be suggested by the Office Action, since a defibrillation pulse is intended to interrupt an arrhythmia rather than evoke a responsive heart contraction.

Furthermore, Applicant respectfully submits Seguine's circuit appears to be at least temporarily inoperable during a period of time while the amplifiers remain saturated and until the switch circuitry pulls the amplifiers out of saturation. Unlike Seguine, in an example of the present approach, because the frequency response change occurs after a detected pacing therapy event, detected evoked and/or detected intrinsic event—and not merely after saturated amplifiers are detected—the sensing circuit can remain capable of continually sensing throughout the change in frequency response and can avoid being rendered ineffective for the period of time that Seguine would take to pull its sense amplifiers out of saturation. As recited or incorporated in the present claims, the present sensing circuit can be "configured to trigger a frequency response that is temporarily less sensitive to detecting evoked and intrinsic events of the heart" but need not entirely stop sensing, as apparently would occur during amplifier saturation with Seguine's circuit. In sum, Applicant respectfully requests the reconsideration and withdrawal of this basis of rejection of these claims.

#### § 103 Rejection of the Claims

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seguine et al. (US 6,185,450 B1). Applicant respectfully traverses this rejection and submits that the present claim amendments overcome this rejection because Seguine and/or the Office Action's reasoning do not appear to disclose the subject matter of the claim as currently incorporated in claims 8-10, for reasons similar to those discussed above with respect to the § 102 rejection of claim 1.

**AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.116 - EXPEDITED PROCEDURE**

Serial Number: 10/615,636

Filing Date: July 10, 2003

Title: CARDIAC RHYTHM MANAGEMENT SYSTEM WITH TIME-DEPENDENT FREQUENCY RESPONSE

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**Reservation of Rights**

In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action. However, this does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other reference of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserve all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claims, as required by MPEP § 821.04.

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**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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Date October 12, 2009

By 

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 12th day of October 2009.

Kate Gannon

/ Kate Gannon /

Name

Signature